2164

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Docket No. **9457.00**

CLAIM FOR BENEFIT OF EARLIER-FILED FOREIGN APPLICATION

Application of

Gameelah Ghafoor et al.

JUN 11 2002

Serial No. **10/051,355**

Group Art Unit: **2164**

Filed: **January 18, 2002**

Examiner: **Unknown**

For: **SELF-SERVICE TERMINAL**

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Sir:

Applicants wish to claim the benefit of the filing dates of the earlier G.B. Application Serial Nos. **0101498.4**, filed on **January 20, 2001**; and **0113471.7**, filed on **June 4, 2001**; and, recited in the Declaration under the provision of 35 U.S.C. 119, and accordingly, Applicants submit herewith a certified copy of each of said British applications.

Respectfully submitted,

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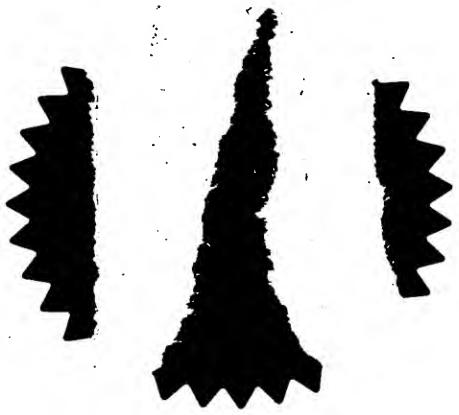

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20 JAN 2001 9457

22JAN01 E599617-1 D02073
P01/7700 0.00-0101498.4

2. Patent application number
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0101498.4

3. Full name, address and postcode of the or of each applicant (*underline all surnames*)

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1700 SOUTH PATTERSON BOULEVARD
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6105449001

Patents ADP number (*if you know it*)

If the applicant is a corporate body, give the country/state of its incorporation

INCORPORATED IN THE STATE OF DELAWARE

4. SELF SERVICE TERMINAL

5. Name of your agent (*if you have one*)
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Request for substantive examination (*Patents Form 10/77*)	
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SELF-SERVICE TERMINAL

The present invention relates to a self-service terminal (SST) and to a method of operating an SST. In particular, the invention relates to an automated teller machine (ATM), and to a method of operating an ATM.

ATMs provide users with a convenient source of cash in an unattended environment. However, to benefit from this convenience a user must be able to access an ATM, and must also be able to input data requested by the ATM (such as a personal identification number (PIN), an amount of cash to be withdrawn, and such like data). Certain people are not able to benefit from the convenience of ATMs, for example, because they are confined to a home, because they have a visual impairment, because an ATM is located in an area that is not physically accessible for them, or such like reason.

To overcome this problem, some people entrust their bank card and PIN to a third party for conducting transactions on their behalf; but this is undesirable because it is open to abuse, for example, if the third party withdraws more money that they are asked to withdraw, or if the third party makes unauthorised withdrawals.

It is among the objects of an embodiment of the present invention to obviate or mitigate one or more of the above disadvantages, or other disadvantages associated with conventional ATMs.

According to a first aspect of the present invention there is provided a self-service terminal having a user interface including transaction entry means and a token reader for reading an identification token, characterised in that the terminal is operable to read a token indicating that a transaction is to be entered using remote entry

means, and includes contact means for contacting the remote entry means to allow a transaction to be entered thereby.

Preferably, an entire transaction may be entered using the remote entry means, where an entire transaction includes entry of an identification, such as a PIN, and entry of transaction data, such as an amount of money to be withdrawn.

Preferably, the identification token is a card, such as a magnetic stripe card or a smart card. Alternatively, the identification token may be a portable device, such as a smart ring, smart button, personal digital assistant, cellular telephone, or such like.

Preferably, the remote entry means is in the form of a telephone, such as a cellular telephone or a landline telephone. Alternatively, the remote entry means is in the form of a computing device having a modem. Typical computing devices include a personal computer (PC), a pocket computer, a personal digital assistant, and such like.

Preferably, the card stores data relating to a telephone number to be called by the terminal to contact the telephone or modem.

The contact means may contact the remote entry means directly, for example, by dialling a telephone number associated with the remote entry means. Alternatively, the contact means may contact the remote entry means indirectly, for example, by requesting a remote centre to contact the remote entry means. The remote centre may be a transaction host.

The self-service terminal may be an ATM.

By virtue of this aspect of the invention an account holder who is unable to access or use an ATM is able to

provide a third party with a token that the third party presents to the ATM. The account holder is contacted by the ATM when a transaction is to be entered. The account holder can then enter a security code (such as a PIN) and transaction details (such as withdraw twenty pounds sterling). This enables an account holder to allow a third party to collect money or other media from their account using an ATM, without having to divulge a PIN or other security code to the third party, thereby minimising the potential for abuse of trust.

According to a second aspect of the present invention there is provided a method of operating a self-service terminal, the method including the step of reading an identification token, and being characterised by the further steps of either: contacting remote entry means to allow a transaction to be entered in the event that the token indicates remote entry means are to be used; or receiving a transaction entered using local entry means.

According to a third aspect of the present invention there is provided a self-service terminal system comprising a host and at least one self-service terminal, the terminal having a user interface including transaction entry means and a token reader for reading an identification token, characterised in that the terminal is operable to read a token indicating that a transaction is to be entered using remote entry means, and the system includes contact means for contacting the remote entry means to allow a transaction to be entered thereby.

These and other aspects of the present invention will be apparent from the following specific description, given by way of example, with reference to the accompanying drawings, in which:

Fig 1 is a block diagram of a self-service terminal system according to one embodiment of the present invention;

Fig 2 is a schematic perspective view of one of the terminals of Fig 1;

Fig 3 is a simplified block diagram of the architecture of the terminal of Fig 2; and

Figs 4a to 4d illustrate screens presented to a user of one of the terminals of Fig 1 during a transaction.

Reference is now made to Fig 1, which is a block diagram of a self-service terminal system 10 according to one embodiment of the present invention. The system 10 is owned and operated by a financial institution and comprises a host 12 interconnected to a plurality of SSTs 14 (only two, 14a and 14b, are shown) by a secure network 16. The SSTs 14 are ATMs. The host 12 includes a communication interface 17, an authorisation facility 18 and a back-office facility 20.

The authorisation facility 18 authorises transaction requests received from ATMs via the network 16. The authorisation facility 18 also authorises transaction requests received from Point of Sale terminals (not shown) and other ATM networks (not shown).

The back-office facility 20 maintains records for every account maintained by the financial institution. Each record includes a list of all the transactions (for example direct credits, direct debits, cheques, withdrawals, and such like) executed relating to that account. The back-office facility 20 provides (typically on a daily basis) the transaction authorisation facility 18 with account information for each account maintained by the financial institution.

The ATMs 14 are physically remote from each other, but are shown in proximity in Fig 1 for clarity. Fig 1 also shows a remote entry means 21 in the form of a cellular telephone which can be accessed by the communication interface 17, as described in more below.

Reference is now made to Fig 2, which is a perspective view of one of the ATMs 14 of Fig 1. Each ATM 14 has a user interface 22 located within a moulded fascia 24. The user interface 22 comprises a display 26, local entry means 28 in the form of an encrypting keypad, a cash dispense slot 30, a card entry/exit slot 32, and a receipt slot 34.

Reference is now made to Fig 3, which is a simplified block diagram of the architecture of the terminal of Fig 2. A system bus (or a plurality of system buses) 36 interconnects various modules in an ATM controller 40 to allow mutual intercommunication, as will be described in more detail below.

User associated modules 42 comprise the following elements (peripheral devices): a token reader 50 in the form of a card reader, the display 26, the encrypting keypad module 28, a printer 56, and a cash dispenser 58. Some of these user associated modules 42 are part of the user interface 22 (such as the display 26 and the keypad 28), other user associated modules 42 are associated with the user interface 22 (such as the card reader 50, which is associated with the card entry/exit slot 32).

The controller 40 comprises modules for driving the user interface elements, namely: card reader controller 60, display controller 62, keypad controller 64, printer controller 66, and dispenser controller 68. These user interface elements (26, 28, 50, 56, and 58) and associated controllers (60 to 68) are standard modules that are used in

conventional ATMs and will not be described in detail herein.

The controller 40 also comprises a BIOS 70 stored in non-volatile memory, a microprocessor 72, associated main memory 74, storage space 76 in the form of a magnetic disk drive, and a dedicated network connection 78 for connecting the ATM 14 to the transaction host 12 (Fig 1) via the network 16.

In use, the main memory 74 is loaded with an ATM operating system kernel 80, and an ATM application 82. As is well known in the art, the operating system kernel 80 is responsible for memory, process, task, and disk management. The ATM application 82 is responsible for controlling the operation of the ATM 14.

If a person is unable to use an ATM, for example because they have mobility problems, then that person provides the financial institution with a contact telephone number to be used during a transaction. The institution then issues that person (the account holder) with a magnetic stripe card that stores the contact telephone number in addition to conventional details about the account holder and the account.

When the account holder wishes to withdraw cash from an ATM, then the account holder gives the card to a trusted third party, for example a friend or relative. Such a transaction will now be described with reference to Figs 4a to 4c, which illustrate screens presented to the third party during a transaction. The term "screen" is used herein to denote the graphics, text, controls (such as menu options), and such like, that are displayed on an ATM monitor; the term "screen" as used herein does not refer to the hardware

(that is, the monitor) that displays the graphics, text, controls, and such like.

Initially, the third party approaches an ATM 14 displaying screen 100 (Fig 4a) and inserts the card.

The card reader 50 reads the magnetic stripe on the card and conveys the read details to the ATM application 82 via the card reader controller 60 and the bus 36. The ATM application 82 analyses these details and determines that the magnetic stripe stores a telephone number in addition to account details (for example, name of account, number of account, and such like).

The ATM application 82 displays screen 102 (Fig 4b) to inform the third party that the transaction will be entered by a remote user.

The ATM application 82 then uses network connection 78 to convey a file including account details and the telephone number to the communication interface 17 in host 12. The communication interface 17 receives this file and automatically dials the telephone number and activates an audio and/or visual interface. This embodiment uses an audio interface having recorded messages and selectable options associated with numbers so that a user can select an option by depressing a number on the telephone keypad.

When the account holder answers this telephone call at the cellular telephone 21, then the account holder is first asked (by the audio interface) to enter a secure code. The secure code may be the account holder's PIN, or it may be another code (referred to herein as an access code). The access code may be a subset of a longer code. For example, the account holder may be asked to enter the second, fourth, and fifth digits/letters of their access code. This may be

used to improve security in case a fraudulent person attempts to eavesdrop or intercept a code as it is being entered by the account holder.

Once the account holder has entered the secure code, a transaction menu is then recited to the account holder. The transaction menu may include options such as: bill payment, cash withdrawal, transfer funds between accounts, and such like.

In this example, the account holder selects the cash withdrawal option.

A cash withdrawal menu is then recited to the account holder. The account holder enters the amount of cash to be withdrawn. A confirmation menu may also be recited to allow the account holder to confirm the transaction details.

The communication interface then combines the transaction details and code entered by the account holder with the account details conveyed form the ATM 14 into a single transaction request file and sends the transaction request file to the authorisation facility 18 for authorising.

If the transaction request is authorised then the host 12 notifies the ATM 14 and the ATM application 82 presents a screen 104 (Fig 4c) to the trusted third party to inform him/her to remove the card because cash is about to be dispensed.

The communication interface 21 may also inform the account holder via cellular telephone 21 that the transaction has been executed and that cash has been dispensed.

If the transaction request is not authorised, for example, because the secure code was incorrect or because

adequate funds are not available, then the ATM application 82 presents a screen 106 (Fig 4d) to the trusted third party to inform him/her that the transaction was not authorised.

The communication interface 21 may also inform the account holder via cellular telephone 21 that the transaction has not been authorised.

It will be appreciated that this embodiment has the advantage that an account holder can execute a transaction at an ATM without having to be present at the ATM, and without having to divulge their PIN or other secure code to enable the transaction to be executed, thereby reducing the possibility of fraud. It will also be appreciated that this embodiment has the advantage that an account holder can control a transaction in real time even though the account holder is located remotely from a terminal that fulfils the transaction.

Various modifications may be made to the above described embodiment within the scope of the invention, for example, the remote entry means may be a include an encryption unit for increased security. In other embodiments, the ATM application 82 may present the trusted third party with advertisements during the delay introduced by the account holder entering a transaction. In other embodiments, the communication interface 17 may be located within the ATM 14 so that the ATM 14 contacts the remote entry means 21 directly.

Claims

1. A self-service terminal (14) having a user interface (22) including transaction entry means (28) and a token reader (50) for reading an identification token, characterised in that the terminal (14) is operable to read a token indicating that a transaction is to be entered using remote entry means (21), and includes contact means (78,82) for contacting the remote entry means (21) to allow a transaction to be entered thereby.

2. A terminal according to claim 1, wherein an entire transaction may be entered using the remote entry means.

3. A terminal according to claim 1 or 2, wherein the identification token is a card.

4. A terminal according to any preceding claim, wherein the remote entry means (21) is a telephone.

5. A terminal according to claim 4, wherein the card stores data relating to a telephone number to be called by the terminal to contact the telephone.

6. A terminal according to any preceding claim, wherein the contact means contacts the remote entry means directly.

7. A terminal according to any preceding claim, wherein the terminal is an automated teller machine.

8. A method of operating a self-service terminal, the method including the step of reading an identification token, and being characterised by the further steps of either: contacting remote entry means to allow a transaction to be entered in the event that the token indicates remote

entry means are to be used; or receiving a transaction entered using local entry means.

9. A self-service terminal system (10) comprising a host (12) and at least one self-service terminal (14), each terminal (14) having a user interface (22) including transaction entry means (28) and a token reader (50) for reading an identification token, characterised in that each terminal (14) is operable to read a token indicating that a transaction is to be entered using remote entry means (21), and the system (10) includes contact means (17) for contacting the remote entry means (21) to allow a transaction to be entered thereby.

SELF-SERVICE TERMINAL

Abstract

A self-service terminal (14) is described. The terminal has a user interface (22) including transaction entry means (28) and a token reader (50) for reading an identification token. The terminal (14) is operable to read a token indicating that a transaction is to be entered using remote entry means (21) such as a telephone. The terminal further includes contact means (78,82) for contacting the remote entry means (21) to allow a transaction to be entered thereby. A method of operating a self-service terminal, and a self-service terminal system, are also described.

[Fig 1]

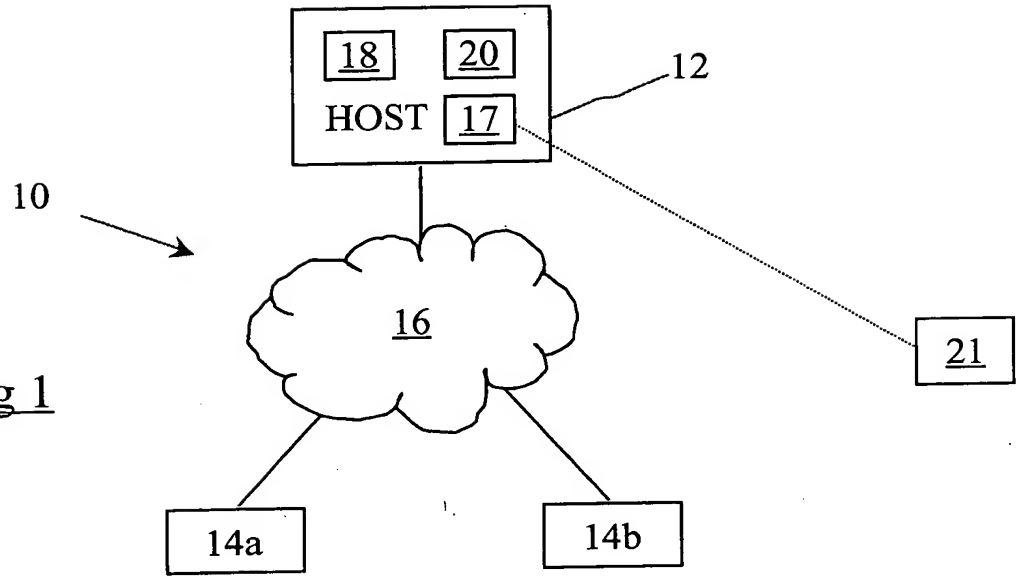

Fig 1

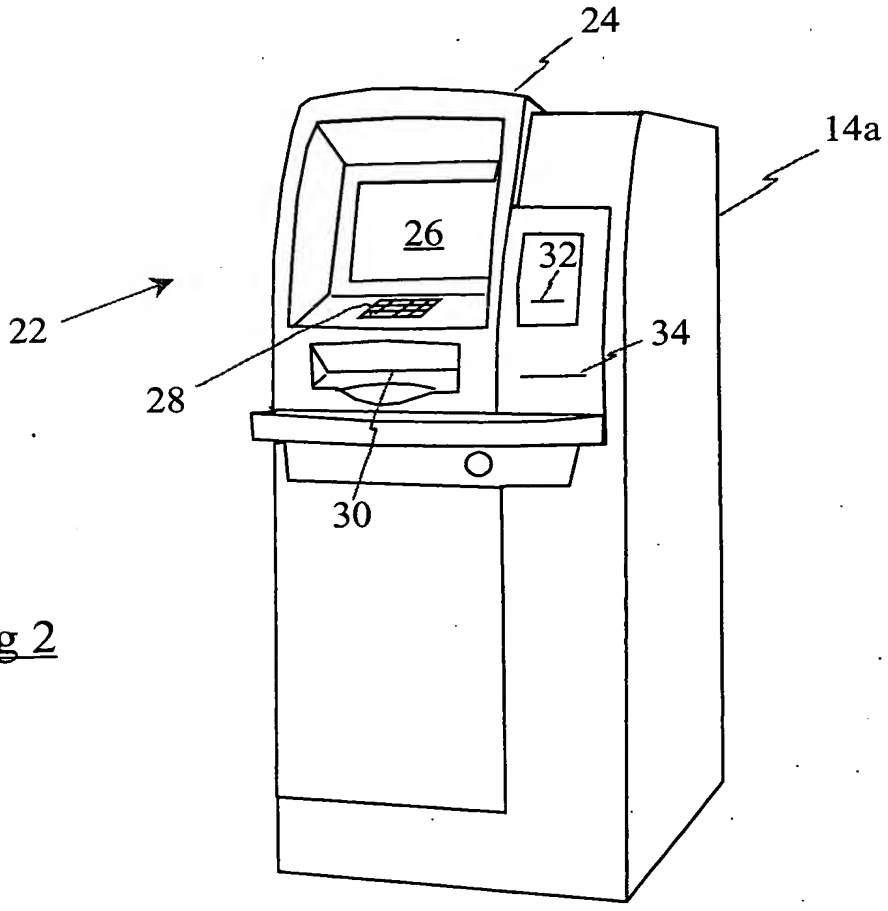

Fig 2

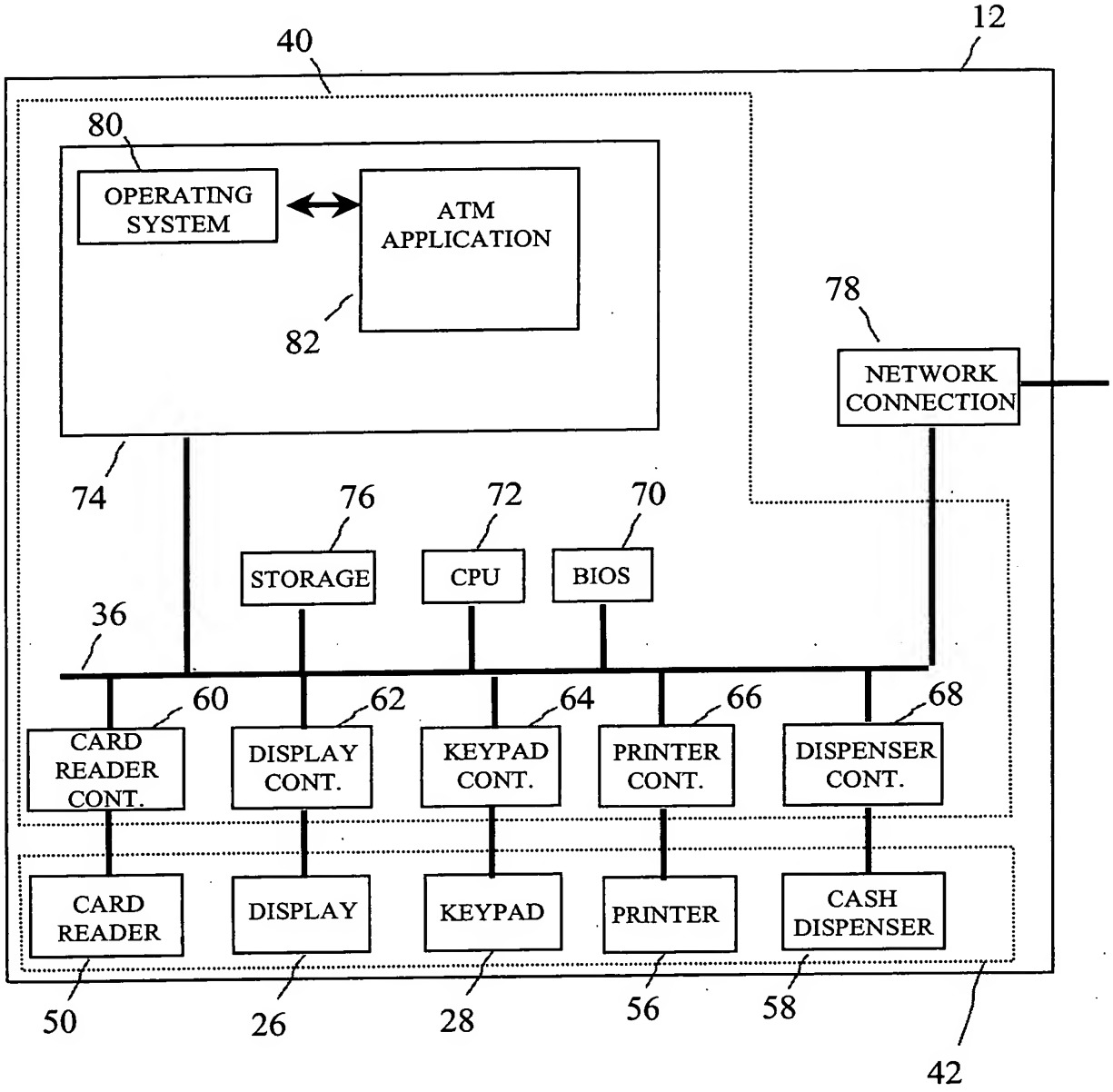
12
40
80
OPERATING SYSTEM
ATM APPLICATION
82
78
NETWORK CONNECTION
74
76
72
70
STORAGE
CPU
BIOS
36
60
62
64
66
68
CARD READER CONT.
DISPLAY CONT.
KEYPAD CONT.
PRINTER CONT.
DISPENSER CONT.
CARD READER
DISPLAY
KEYPAD
PRINTER
CASH DISPENSER
50
26
28
56
58
42

Fig 3

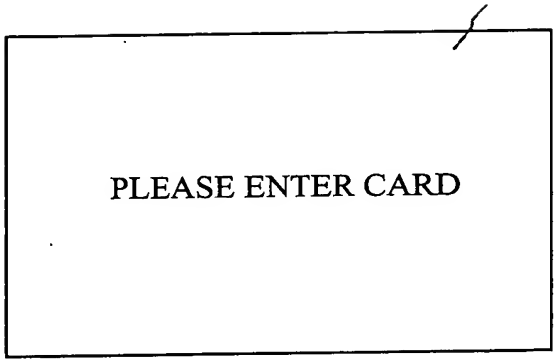

Fig 4A

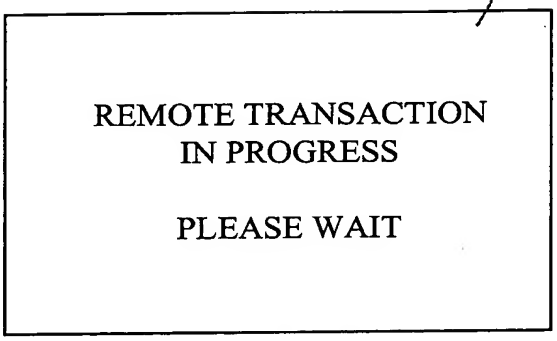

Fig 4B

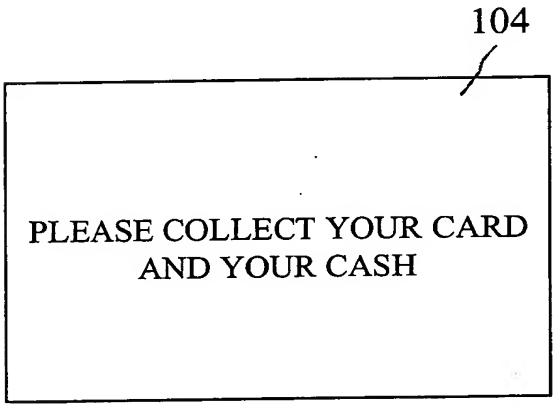

Fig 4C

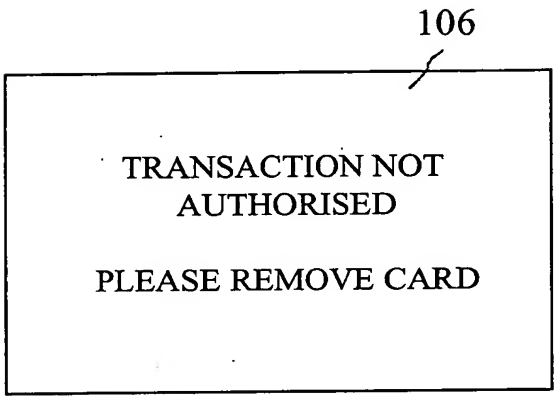

Fig 4D